



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,404	11/14/2001	Takeshi Kamio	SH-0027US	7029
21254 7590 02/15/2011 MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817				
EXAMINER				
HOFFMANN, JOHN M				
ART UNIT		PAPER NUMBER		
1741				
MAIL DATE		DELIVERY MODE		
02/15/2011		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* TAKESHI KAMIO and  
MAKOTO YOSHIDA

---

Appeal 2009-014505  
Application 09/987,404  
Technology Center 1700

---

Before CHUNG K. PAK, JEFFREY T. SMITH, and  
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

---

<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

This is a decision on an appeal under 35 U.S.C. § 134 from the Examiner's refusal to allow claims 1, 3-8, 10-15, 17, and 21-25. We have jurisdiction pursuant to 35 U.S.C. § 6.

We AFFIRM-IN-PART.

#### STATEMENT OF THE CASE

The subject matter on appeal is directed to a method of sintering a porous-glass material. Claim 1 is illustrative:

1. A method for sintering a porous-glass material, having a core inside the porous-glass material, in a furnace to form a glass base material, which is a base material for an optical fiber, comprising:

preparing a ring heater having an opening, said opening having an inner diameter (D), through which said porous-glass material passes, for heating said porous-glass material;

preparing said porous-glass material having an outer diameter (d);

putting said porous-glass material, formed by performing said preparing said porous-glass material, in the furnace; and

heating said porous-glass material in an atmosphere of dehydration gas and inert gas with said ring heater,

wherein said outer diameter(d) of said porous-glass material is within a range of  $0.5 \times D < d < 0.9 \times D$ .

The Examiner maintains the following rejections:

1) Claims 1, 3-7, and 21-25 under 35 U.S.C. § 103(a) over Ishikawa (US 5,306,322, issued Apr. 26, 1994); and

2) Claims 8, 10-15, and 17 under 35 U.S.C. § 103(a) over Ishikawa in view of Antos (US 6,289,698 B1, issued Sept. 18, 2001).

With respect to rejection (1), Appellants focus their arguments on claims 1 and 6. (App. Br. 7-16). *See* 37 C.F.R. § 41.37(c)(1)(vii) (“[a] statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim”). Accordingly, we address Appellants’ arguments with respect to claims 1 and 6 only.

With respect to rejection (2), Appellants provide no additional argument for this rejection and instead refer to the arguments made regarding the rejection of claim 1 in rejection (1). (App. Br. 17-19). Therefore, the claims under rejection (2) stand or fall with our decision regarding the rejection of claim 1 in rejection (1).

### *REJECTION (1)*

#### Claim 1

#### ISSUE

Did the Examiner err in determining that Ishikawa would have rendered obvious the method for sintering a porous-glass material comprising, *inter alia*, using an outer diameter (d) of a porous-glass material within the range of  $0.5xD < d < 0.9xD$ , where D represents an inner diameter of the ring heater, as required by claim 1 within the meaning of § 103? We decide this issue in the negative.

#### ANALYSIS AND FACTUAL FINDINGS

We begin by noting that claim 1 recites “[an] outer diameter (d) of said porous-glass material is within a range of  $0.5xD < d < 0.9xD$ ,” which converts to a ratio (d/D) having a range of  $0.5 < d/D < 0.9$ .

Turning our attention to the Examiner's rejection, Appellants argue that "Ishikawa teaches a ratio of  $d/D = 0.93$ , which is outside of the claimed range. The Examiner, however, alleges that the claimed range would have been obvious in view of Ishikawa." (App. Br. 7).

It is well settled that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. *Merck & Co. v. Biocraft Labs., Inc.*, 874 F.2d 804, 807 (Fed. Cir. 1989). In this case, while Ishikawa in an exemplary embodiment allegedly teaches a ratio of  $d/D$  of 0.93, Ishikawa is not so limited to such an embodiment.

In this regard, the Examiner recognizes that the object of Ishikawa's invention, like Appellants', is to produce a non-defective optical fiber preform via a process where the porous glass preform is not damaged by the wall of the muffle tube. (Ans. 4-6). The Examiner states that "one cannot make the [porous glass] preform any smaller than 0% of  $D$ , nor can it be greater than 100% of  $D$ ." (Ans. 6). The Examiner also states that "one would not want . . . [the ratio  $d/D$ ] too close to 1.0 because it would be too difficult of a fit [as the porous glass preform may be damaged by the wall of the muffle tube 23]." (Ans. 5).

Thus, one of ordinary skill in the art at the time of the invention would have been motivated to arrive at the optimum value of  $d$  (i.e., a ratio  $d/D$  between 0.5 and 0.9) in order to produce optical fiber preforms without defects (i.e., preventing the porous glass preform from touching the inside diameter of the wall of the muffle tube and thus preventing the formation of a damaged optical fiber preform). See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) and *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980).

Therefore, because the Examiner has established a prima facie case of obviousness, we determine that the burden properly shifted to Appellants to present persuasive arguments or evidence refuting the Examiner's prima facie case.

Attempting to refute the Examiner's prima facie case and establish unexpected results, Appellants argue that

In order to clearly verify the evidence that unexpected results are obtained by using a ratio ( $d/D$ ) of  $0.5 < d$ , [sic:  $<$ ] 0.9, Appellants submitted two graphs (Graph 1 and Graph 2) regarding test results submitted in Declarations under 37 C.F.R. § 1.132. . . .

As clearly illustrated in Graph 1, in the case that  $d/D$  exceeds 0.5, the eccentricity error is significantly decreased. Accordingly, Appellants submit that the claimed range ( $0.5 < d/D$ ) obtains unexpected results.

Furthermore, as shown in Graph 2, in the case that  $d/D$  exceeds 0.9, the number of test pieces (glass base material) of which a surface is damaged is increased. Accordingly, Appellants submit that the claimed range ( $d/D < 0.9$ ) obtains unexpected results.

(App. Br. 7-8).

Regarding the evidence of unexpected results, it is well settled that Appellants have the burden of showing that the claimed invention imparts not just any improvement, but an unexpected improvement. *In re Klosak*, 455 F.2d 1077, 1080 (CCPA 1972); *see also In re Skoner*, 517 F.2d 947, 948 (CCPA 1975) (Expected results are evidence of obviousness just as unexpected results are evidence of unobviousness).

In our case, we agree with the Examiner's undisputed finding that Appellants' Declaration 1 (entered Feb. 7, 2007) and Graph 1 fail to allege any unexpected results. (*Compare* Ans. 9-11 with App. Br. 7-15 and Reply Br. 2-5). Indeed, page 3 of Appellants' Declaration 1 only alleges

“tremendous advantages” from using a ratio  $d/D$  falling within the claimed range required by claim 1. Appellants simply have not explained why the results exhibited in Declaration 1 would have been unexpected.

With respect to Appellants’ arguments that their Declaration 2 (entered July 19, 2006) and their Graph 2, which graphically depicts data included in their Declaration 2, show unexpected results, we agree with the Examiner’s undisputed findings made at pages 8, 9, 11, 12, and 13 of the Answer that Appellants’ evidence is not reasonably commensurate in scope with the degree of protection sought by claim 1 and that Appellants’ evidence fails to explain any causation (i.e., nexus) between the ratio  $d/D$  and the results shown in Appellants’ Declaration 2 and Graph 2. (*Compare* Ans. 8, 9, 11, 12, and 13 *with* App. Br. 7-15 and Reply Br. 2-5). *See Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 306 n. 42 (Fed. Cir. 1985).

Accordingly, based on the factual findings set forth in the Answer and above, we determine that the preponderance of evidence weighs most heavily in favor of obviousness of the subject matter defined by claim 1 within the meaning of 35 U.S.C. § 103 such that the Examiner did not err in determining that Ishikawa would have rendered obvious the method for sintering a porous-glass material comprising, *inter alia*, using an outer diameter ( $d$ ) of a porous-glass material within the range of  $0.5 \times D < d < 0.9 \times D$ , where  $D$  represents an inner diameter of the ring heater, as required by claim 1 within the meaning of § 103.

We sustain<sup>2</sup> the Examiner's decision to reject claims 1, 3-5, 7, and 21-25 under 35 U.S.C. § 103(a) over Ishikawa.

### Claim 6

We begin by noting that claim 6, states, “[a] method as claimed in claim 1, wherein an eccentricity error of a core inside a glass base material manufactured by sintering said porous-glass material is substantially 0.4 % or less.”

Appellants argue that the Examiner erred in rejecting claim 6 because Ishikawa fails to “teach or suggest a ratio of (d/D) . . . together with an eccentricity error of the core as [required by claim 6].” (App. Br. 9). We agree.

The Examiner states that “[i]t would have been obvious to make the preform as error free as possible [i.e., to employ an eccentricity error of a core to be substantially 0.4% or less as required by claim 6].” (Ans. 6).

---

<sup>2</sup> We note that Appellants advance, for the first time, the argument that Ishikawa's Figures 2-4 and 7, when measured with a ruler, show a ratio d/D that falls outside of the ratio d/D range required by claim 1. (Reply Br. 2-4) Since this argument was not timely presented, we consider it waived. *See* 37 C.F.R. § 41.41(a)(2)(2009). *Cf. Cross Med. Prods., Inc. v. Medtronic Sofamore Danek, Inc.*, 424 F.3d 1293, 1321 n.3 (Fed. Cir. 2005) (holding that no arguments will be addressed unless they are properly raised in the opening Brief). Nevertheless, we note that this argument is unpersuasive of reversible error because Appellants' argument is improperly premised on the assumption that Ishikawa's Figures 2-4 and 7 are drawn to scale. *See Hockerson-Halberstadt, Inc. v. Avia Group Int'l*, 222 F.3d 951, 956 (Fed. Cir. 2000) (stating that “it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.”). Indeed, nowhere does Ishikawa disclose that its Figures may be relied upon to define the precise proportions of its elements such as the ratio d/D.



This, however, is merely a conclusory statement, as the Examiner fails to provide *any* credible reason or evidence as to why and how it would have been obvious to employ and/or produce such an “error free” preform.

Indeed, nowhere does Ishikawa mention an error free preform or any eccentricity error of the core as required by claim 6.

Accordingly, for the reasons stated by Appellants in the Briefs and, as discussed above, we reverse the Examiner’s decision to reject claim 6 over Ishikawa.

#### ORDER

In summary, the rejection of claims 1, 3-5, 7, and 21-25 under 35 U.S.C. § 103(a) over Ishikawa and the rejection of claims 8, 10-15, and 17 under 35 U.S.C. § 103(a) over Ishikawa in view of Antos are sustained.

The rejection of claim 6 under 35 U.S.C. § 103(a) over Ishikawa is reversed.

Accordingly, the Examiner’s decision is affirmed-in-part.

#### TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

#### AFFIRMED-IN-PART

bar

MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC  
8321 OLD COURTHOUSE ROAD SUITE 200  
VIENNA, VA 22182-3817